

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (currently amended) An optical waveguide device, comprising:

a substrate;

at least one optical waveguide disposed in said substrate;

a first conductive thin film layer placed in the vicinity of or on the top of said optical waveguide in said substrate and containing an oxide; and

a second conductive thin film layer laminated on said first thin film layer and exhibiting acidic or neutral characteristics in its oxidized condition,

wherein said substrate is a lithium niobate (LiNbO₃) substrate, said optical waveguide comprises two Mach-Zehnder type directional couplers and a phase shifter between these directional couplers, and said phase shifter comprises an electrode of a structure containing said first thin film layer and said second thin film layer, whereby an electric field produced in response to a voltage applied to said electrode is

given to said optical waveguide to function as a variable optical attenuator.

2. (original) An optical waveguide device as claimed in claim 1, wherein:

said first thin film layer contains an indium oxide (ITO).

3. (original) An optical waveguide device as claimed in claim 1, wherein:

said second thin film layer contains chromium.

4. (original) An optical waveguide device as claimed in claim 1, wherein:

a protective film is formed on at least one exposed surface of each of said first thin film layer and said second thin film layer.

5. (currently amended) The optical waveguide of claim 1, An optical waveguide device, comprising:

~~a substrate;~~

~~at least one optical waveguide disposed in said substrate;~~

~~a first conductive thin film layer placed in the vicinity of or on the top of said optical waveguide in said substrate and containing an oxide; and~~

~~a second conductive thin film layer laminated on said first thin film layer and exhibiting acidic or neutral characteristics in its oxidized condition,~~

wherein a third conductive thin film layer exhibiting neutral characteristics is formed on the surface of said second thin film layer.

6. (original) An optical waveguide device as claimed in claim 5, wherein:

said third thin film layer contains gold.

7. (currently amended) An optical waveguide device as claimed in claim [[1]] 5, wherein:

a protective film is formed over the whole exposed surface of an electrode composed of said first thin film layer, said second thin film layer, and said third thin film layer.

8. (canceled)

9. (original) An optical waveguide device as claimed in claim 1, wherein:

said second thin film layer is provided with a third conductive thin film layer laminated thereon and exhibiting neutral characteristics in its oxidized condition.

10. (currently amended) ~~An optical waveguide device as claimed in claim 1,~~ An optical waveguide device, comprising:

a substrate;

at least one optical waveguide disposed in said substrate;

a first conductive thin film layer placed in the vicinity of or on the top of said optical waveguide in said substrate and containing an oxide; and

a second conductive thin film layer laminated on said first thin film layer and exhibiting acidic or neutral characteristics in its oxidized condition,

wherein [[:]] said first thin film layer is a thin film layer of indium oxide to which tin has been added (ITO) [[:]] and said second thin film layer is a chromium thin film layer.

11. (original) An optical waveguide device as claimed in claim 9, wherein:

said third thin film layer is a gold thin film layer.

12. (original) A process for the production of an optical waveguide device, comprising the steps of:

forming at least one optical waveguide in an LN (lithium niobate) substrate;

forming an ITO film on said optical waveguide and the surface of said LN substrate;

forming a photoresist on said ITO film to conduct a patterning operation;

removing unnecessary portions of said ITO film by means of etching with use of said photoresist as a mask to form the ITO pattern;

removing the photoresist on said ITO pattern;

forming a chromium thin film having a thinner film thickness than that of said ITO film on the surface of said ITO pattern and an exposed surface of said substrate;

applying a photoresist on said chromium thin film;

removing unnecessary portions of said chromium thin film by means of etching; and

removing the photoresist remained on said chromium thin film after said etching.

13. (new) The optical waveguide device of claim 10, further comprising a protective film on at least one exposed

surface of each of said first thin film layer and said second thin film layer.

14. (new) The optical waveguide device of claim 10, further comprising a third conductive thin film layer exhibiting neutral characteristics on the surface of said second thin film layer.

15. (new) The optical waveguide device of claim 14, wherein said third thin film layer contains gold.

16. (new) The optical waveguide device of claim 14, further comprising a protective film over the whole exposed surface of an electrode composed of said first thin film layer, said second thin film layer, and said third thin film layer.

17. (new) The optical waveguide device of claim 10, wherein said second thin film layer has a third conductive thin film layer laminated thereon that exhibits neutral characteristics in its oxidized condition.

18. (new) The optical waveguide device of claim 10, wherein:

said substrate is a lithium niobate (LiNbO_3) substrate;

said optical waveguide comprises two Mach-Zehnder type directional couplers and a phase shifter between these directional couplers; and

said phase shifter comprises an electrode containing said first thin film layer and said second thin film layer.